January 2005

Test 1855: John Deere 4720 Ehydro Diesel Hydrostatic

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

NEBRASKA TRACTOR TEST 1855
JOHN DEERE 4720 EHYDRO DIESEL
HYDROSTATIC

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—541 rpm)					
51.77 *(38.60)*	2402	3.29 *(12.47)*	0.449 *(0.273)*	15.72 *(3.10)*	
Standard Power Take-off Speed - (541 rpm)					
51.77 *(38.60)*	2402	3.29 *(12.47)*	0.449 *(0.273)*	15.72 *(3.10)*	
VARYING POWER AND FUEL CONSUMPTION					
51.77 *(38.60)*	2402	3.29 *(12.47)*	0.449 *(0.273)*	15.72 *(3.10)*	Air temperature
46.48 *(34.66)*	2535	3.13 *(11.86)*	0.476 *(0.289)*	14.84 *(2.92)*	75°F *(24°C)*
35.22 *(26.26)*	2567	2.52 *(9.55)*	0.505 *(0.307)*	13.96 *(2.75)*	Relative humidity
23.59 *(17.59)*	2589	1.91 *(7.24)*	0.572 *(0.348)*	12.33 *(2.43)*	74%
12.01 *(8.96)*	2608	1.40 *(5.31)*	0.824 *(0.501)*	8.56 *(1.69)*	Barometer
0.60 *(0.44)*	2644	0.95 *(3.59)*	11.246 *(6.841)*	0.63 *(0.12)*	28.75"Hg *(97.36 kPa)*

Maximum Torque 141 lb.-ft. *(191 Nm)* at 1550 rpm
Maximum Torque Rise - 24.6%
Torque rise at 1900 rpm - 17%

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
At no load in B range speed setting 4.7 mph *(7.5 km/h)*	86.2	85.7
Transport speed - no load - C range		86.5
Bystander in C range		78.4

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 17.5L-24; 8; 20 *(135)*
Front Tires–No., size, ply & psi *(kPa)*	Two 10-16.5; 6; 15 *(105)*
Height of Drawbar	15.5 in *(395 mm)*
Static Weight with operator– Rear	2395 lb *(1086 kg)*
– Front	1640 lb *(744 kg)*
– Total	4035 lb *(1830 kg)*

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832
Dates of tests: August 31-September 2, 2005

Manufacturer: John Deere Commercial Products Inc., 700 Horizon South Parkway, Grovetown Ga. USA, 30813

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.8473 **Fuel weight** 7.055 lbs/gal *(0.846 kg/l)* **Oil SAE** 15W40 **API service classification** CG-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard Fluid **Total time engine was operated** 5.0 hours

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger **Serial No.** *PE4024T025769* **Crankshaft** lengthwise **Rated engine speed** 2400 **Bore and stroke** 3.386" x 4.134" *(86.0 mm x 105.0 mm)* **Compression ratio** 20.5 to 1 **Displacement** 149 cu in *(2440 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element and one polyester felt element **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** horizontal **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: Fuel rate: 22.0 - 24.5 lb/h *(10.0 - 11.0 kg/h)* **High idle:** 2550 - 2650 rpm **Turbo boost:** nominal 10.2 - 13.1 psi *(70 - 90 kPa)* as measured 11.6 psi *(80 kPa)*

CHASSIS: Type Front wheel assist **Serial No.** *LV4720H270091* **Tread width** rear 51.3" *(1304 mm)* to 74.8" *(1900 mm)* front 53.1" *(1349 mm)* to 56.7" *(1440 mm)* **Wheelbase** 71.5" *(1816 mm)* **Hydraulic control system** direct engine drive **Transmission** Hydrostatic. Infinitely variable within the ranges shown. The transmission has 3 mechanical ranges **Nominal travel speeds mph *(km/h)*** A -0-3.7*(6.0)*, B- 0-6.6*(10.7)*, C -0-15.5*(25.0)* reverse A-0-3.7*(6.0)*, B 0-6.6*(10.7)*, C-0-15.5*(25.0)* **Clutch** none - travel speed is electronically controlled by foot pedal **Brakes** single wet disc mechanically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2395 engine rpm **Unladen tractor mass** 3860 lb *(1751 kg)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: I		
Quick Attach: None		
Maximum Force Exerted Through Whole Range:	2523 lbs	*(11.2 kN)* (at 24" behind link ends)
	2821 lbs	*(15.3 kN)* (at lift link ends)
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2600 psi	*(179 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	10.6 GPM	*(40.1 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	11.0 GPM	*(41.6 l/min)*
Delivery pressure:	2215 psi	*(153 bar)*
Power:	14.2 HP	*(10.6 kW)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. *(bar)*	2510 *(173)*
Location:	hydraulic service port
Hydraulic oil temperature: °F *(°C)*	158 *(70)*
Location:	hydraulic sump
Category:	I
Quick attach:	none

SAE Static Test—System pressure 2485 psi *(171 Bar)*

Hitch point distance to ground level in. *(mm)*	8.1 *(205)*	13.7 *(349)*	20.0 *(509)*	26.9 *(684)*	32.1 *(816)*
Lift force on frame lb	2961	3050	3021	2833	2581
" " " " " " *(kN)*	*(13.2)*	*(13.6)*	*(13.4)*	*(11.6)*	*(11.5)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures.This tractor did not meet the manufacturer's claims of: 30% torque rise, 3130 lb *(1423 kg)* lift capacity at ball ends nor implement pump flow of 12.0 GPM *(45.3 l/min)*. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 159°F *(70°C)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1855,** October 26, 2005.

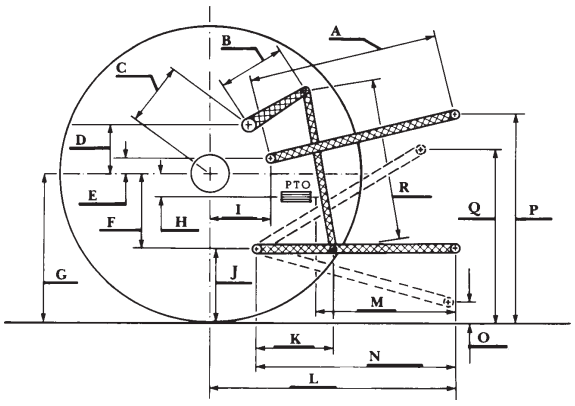
Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

OECD/SAE Test

	inch	*mm*
A	21.9	*555*
B	11.4	*290*
C	13.7	*347*
D	12.7	*323*
E	11.7	*297*
F	5.2	*131*
G	23.1	*586*
H	0.2	*6*
I	12.6	*320*
J	17.9	*455*
K	15.8	*402*
L	32.9	*836*
M	20.1	*511*
N	27.5	*699*
O	8.1	*207*
P	36.0	*915*
Q	30.5	*775*
R	19.0	*483*

HITCH DIMENSIONS AS TESTED - NO LOAD



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